

PATENT ABSTRACTS OF JAPAN

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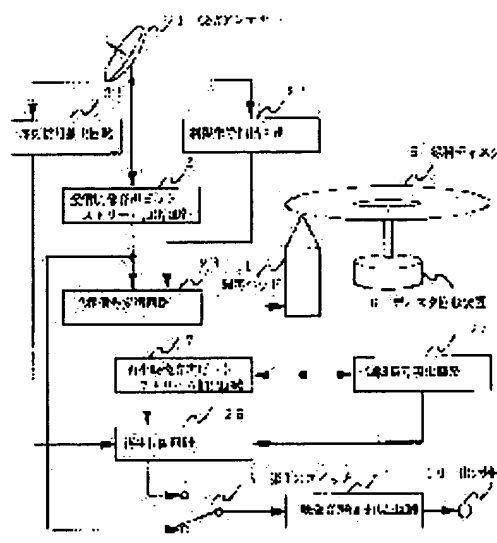
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(54) INFORMATION PROVIDING DEVICE AND INFORMATION RECORDING AND REPRODUCING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To easily protect a copy right in an information providing device for transmitting video and sound information of a CATV and satellite broadcasting, etc., and also in an information recording and reproducing device for recording and reproducing this information by arbitrarily restricting reproducing period and quality on the side of a broadcasting station.

SOLUTION: An output of a receiving video and sound bit stream extracting circuit 2 and an output of a restricting signal extracting circuit 22 are recorded on a recording and reproducing disk 5, and at the time of reproducing, a restricting signal reproduced from the recording and reproducing disk 5 is extracted by a restricting signal reproducing circuit 24, and a signal from a time signal extracting circuit 21 is compared with a signal from the restricting signal reproducing circuit 24 by a reproducing control circuit 25 to decide whether or not an output of a reproducing video and sound bit stream extracting circuit 7 is outputted to an input (a) of a 1st switch 8. Consequently, when the present time falls outside a deadline, video and sound signals are never outputted to an output terminal 10.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the information record regenerative apparatus for carrying out record playback of the information offer equipment which transmits images, such as CATV and satellite broadcasting service, and speech information, and the information offered by that cause.

[0002]

[Description of the Prior Art] Conventionally, as for the information record regenerative apparatus which sending sets, such as CATV and satellite broadcasting service, are known as information offer equipment, and carries out record playback of the output of these information offer equipment, the video tape recorder (it abbreviates to VTR hereafter), the rec/play mold optical disk unit, etc. are known. In recent years, the information record regenerative apparatus for carrying out record playback of the information offer equipment for [which carries out image voice data broadcast] having been digitized, and its output especially with digitization of broadcast is being introduced.

[0003] Drawing 7 is the block diagram showing the configuration of the conventional information record regenerative apparatus. In drawing 7, 1 is a receiving antenna and receives the signal broadcast from information offer equipment. 2 is a receiving image voice bit stream extract circuit, and extracts the digitized image sound signal which is made into the purpose from the output of a receiving antenna 1. 3 is a record signal modulation circuit and adds the signal modulation suitable for recording on a rec/play disk to the digitized image sound signal. 4 is a magnetic recording reproducing head and performs record playback to the rec/play disk 5. 5 is a rec/play disk, it rotates at the rotational frequency which was suitable for record playback with the disk slewing gear 6, and informational record and playback are performed by the magnetic recording reproducing head 4. 6 is a disk slewing gear and rotates the rec/play disk 5 at the rotational frequency suitable for record playback. 7 is a playback image voice bit stream extract circuit, and extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 8 is the 1st switch, and changes and outputs the output of the receiving image voice bit stream extract circuit 2, and the output of the playback image voice bit stream extract circuit 7. 9 is an image sound signal regenerative circuit, from the output of the 1st switch 8, reproduces an image and a sound signal and outputs them to an output terminal 10. 10 is an output terminal and an image and a sound signal are outputted to a graphic display device, sound equipment, etc. which are not illustrated from this.

[0004] The actuation is further explained about the conventional information record regenerative apparatus constituted as mentioned above. In drawing 7, the signal received with a receiving antenna 1 is a signal which received the modulation which the video signal and sound signal by which plurality was digitized were multiplexed, and was suitable for broadcast. From the signal received with the receiving antenna 1, the receiving image voice bit stream extract circuit 2 extracts the image made into the purpose and the signal by which voice was digitized, i.e., a bit stream. The output of the receiving image voice bit stream extract circuit 2 is inputted into the 1st b input and record signal modulation circuit 3 of a switch 8.

[0005] When recording the image and speech information which were received with the receiving antenna 1 on the rec/play disk 5, it becomes irregular by the signal suitable for recording the output of the receiving image voice bit stream extract circuit 2 on a rec/play disk, and the record signal modulation circuit 3 is inputted into a magnetic recording reproducing head 4. On the other hand, the rec/play disk 5 is rotating at the engine speed which was suitable for record playback with the disk slewing gear 6, and according to the electrical input, a magnetic recording reproducing head 4 irradiates light so that it may change the reflection factor on the rec/play

disk 5. This records an image and a sound signal on the rec/play disk 5.

[0006] Moreover, when carrying out playback of the image and sound signal which were recorded on the rec/play disk 5, a magnetic recording reproducing head 4 changes into an electric signal change of the reflection factor recorded on the rec/play disk 5, and inputs it into the playback image voice bit stream extract circuit 7. The playback image voice bit stream extract circuit 7 extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4, and inputs it into a input of the 1st switch 8. The 1st switch 8 is set to the a side, when a user sets up playback of an input signal and playback of the rec/play disk 5 is directed to the b side with the directions means which is not illustrated. The output of the 1st switch 8 is inputted into the image sound signal regenerative circuit 9. In the image sound signal regenerative circuit 9, from the inputted image voice bit stream, an image and a sound signal are reproduced and it is outputted to an output terminal 10. The image sound signal outputted from the output terminal 10 is outputted to a graphic display device, sound equipment, etc. which are not illustrated, and a user can appreciate them.

[0007]

[Problem(s) to be Solved by the Invention] In this information record regenerative apparatus, it has the trouble that playback will be possible forever once it is recorded on a record medium to all the images and speech information that are received, since record playback is possible, and protection of copyrights is impossible enough. Installation of the information offer equipment which can protect copyright easily by the information offer equipment side according to receiving contents, and an information record regenerative apparatus is demanded from now on.

[0008] This invention aims at offer of the information offer equipment which can protect copyright easily, and an information record regenerative apparatus by the ability restricting a refreshable period and grace to arbitration by the information offer equipment side according to receiving contents.

[0009]

[Means for Solving the Problem] The limit information which shows a limit of the record playback to a record medium with the main information including an image sound signal receives the sending signal transmitted by multiplex, and records limit information on a record medium with the main signal, and in order to solve this technical problem, this invention constitutes it at the time of playback from an information offer equipment side so that a limit may be added to playback actuation for limit information.

[0010] Thereby, the information offer equipment and the information record regenerative apparatus which can protect copyright easily are obtained by the ability restricting a refreshable period and grace to arbitration by the information offer equipment side according to receiving contents.

[0011]

[Embodiment of the Invention] Invention of this invention according to claim 1 is information offer equipment with which the main information and the limit information which shows a limit of the playback after this main information was recorded on the record medium are multiplexed and transmitted. By the ability restricting a refreshable period and grace to arbitration by the information offer equipment side according to receiving contents, the information offer equipment which can protect copyright easily is offered by restricting the playback actuation after the main information was recorded on the record medium from a limit signal.

[0012] Invention according to claim 2 is information offer equipment according to claim 1 characterized by for limit information to include the time information which shows a refreshable term, and offers the information offer equipment which can protect copyright easily by the ability being able to restrict a refreshable period by the information offer equipment side by controlling the playback actuation after the main information was recorded on the record medium by refreshable term information.

[0013] Invention according to claim 3 is information offer equipment according to claim 1 characterized by for limit information to include the hour entry which shows current time and refreshable time amount, and offers the information offer equipment which can protect copyright easily by the ability being able to restrict a refreshable period by the information offer equipment side by controlling the playback actuation after the main information was recorded on the record medium by current-time information and the refreshable hour entry.

[0014] Invention according to claim 4 is information offer equipment according to claim 1 characterized by including the information which shows the time amount part from which limit information receives a playback limit of the main information. The information offer equipment which can protect copyright easily is offered by the ability restricting a refreshable time amount part by the information offer equipment side by controlling by

current time information the information which shows the time amount part which receives a playback limit of the main information for the playback actuation after the main information was recorded on the record medium. [0015] Invention according to claim 5 is information offer equipment according to claim 1 characterized by the main information containing one of image information and the speech information, or both, and offers the information offer equipment which can protect copyright easily in image information or the information containing speech information by the ability restricting a refreshable period and grace to arbitration by the information offer equipment side.

[0016] Invention of this invention according to claim 6 receives the sending signal to which the main information and the limit information which shows a limit of the playback after this main information was recorded on the record medium are transmitted by multiplex. A main information extract means to be the information record regenerative apparatus which records on a record medium or is reproduced, and to extract main information from receipt information, A record means to record both a limit information extract means to extract limit information from receipt information, and the main information extract means output and a limit information means output on a record medium, A main information playback means to reproduce the main information extract means output recorded on the record medium, A limit information playback means to reproduce the limit information means output recorded on the record medium, It is the information record regenerative apparatus characterized by providing a playback limit means by which a clock means to obtain current time, and a limit information playback means output and a clock means output restrict playback actuation of a main information playback means. By the ability restricting a refreshable period and grace to arbitration by the information offer equipment side according to receiving contents, the information record regenerative apparatus which can protect copyright easily is offered by restricting playback actuation of the main information playback means to a limit signal.

[0017] Invention according to claim 7 is an information record regenerative apparatus according to claim 6 characterized by a playback limit means directing prohibition and authorization of playback actuation for the main information playback means. By carrying out prohibition and authorization of playback of playback actuation of the main information playback means with a playback limit means, the information record regenerative apparatus which can protect copyright easily is offered by the ability restricting a refreshable period to arbitration by the information offer equipment side according to receiving contents.

[0018] Invention according to claim 8 is an information record regenerative apparatus according to claim 6 with which a playback limit means is characterized by controlling the grace of the print-out of playback actuation for the main information playback means. By controlling the grace of playback of playback actuation of the main information playback means with a playback limit means, the information record regenerative apparatus which can protect copyright easily is offered by the ability restricting refreshable grace to arbitration by the information offer equipment side according to receiving contents.

[0019] Invention according to claim 9 is an information record regenerative apparatus according to claim 6 characterized by the main information playback means outputting one of image information and the speech information, or both, and offers the information record regenerative apparatus which can protect copyright easily in image information or the information containing speech information by the ability being able to restrict a refreshable period and grace to arbitration by the information offer equipment side.

[0020] Hereafter, the gestalt of operation of this invention is explained using drawing 6 from drawing 1. (Gestalt 1 of operation) Drawing 1 is the block diagram showing the configuration of the information record regenerative apparatus of the gestalt 1 of operation of this invention. In drawing 1, 1 is a receiving antenna and receives the signal broadcast from information offer equipment. 2 is a receiving image voice bit stream extract circuit, and extracts the digitized image sound signal which is made into the purpose from the output of a receiving antenna 1. 4 is a magnetic recording reproducing head and performs record playback to the rec/play disk 5. 5 is a rec/play disk, it rotates at the rotational frequency which was suitable for record playback with the disk slewing gear 6, and informational record and playback are performed by the magnetic recording reproducing head 4. 6 is a disk slewing gear and rotates the rec/play disk 5 at the rotational frequency suitable for record playback. 7 is a playback image voice bit stream extract circuit, and extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 8 is the 1st switch, and changes and outputs the output of the receiving image voice bit stream extract circuit 2, and the output of the playback control circuit 25. 9 is an image sound signal regenerative circuit, from the output of the 1st switch 8, reproduces an image and a sound signal and

outputs them to an output terminal 10. 10 is an output terminal and an image and a sound signal are outputted to a graphic display device, sound equipment, etc. which are not illustrated from this. 21 is a time-of-day signal extract circuit, and extracts the current time signal digitized from the output of a receiving antenna 1. 22 is a limit signal extract circuit and extracts the limit signal digitized from the output of a receiving antenna 1. 23 is a record signal modulation circuit, multiplexes the output of the receiving image voice bit stream extract circuit 2, and the output of the limit signal extract circuit 22, and adds the signal modulation suitable for recording on the rec/play disk 5. 24 is a limit signal regeneration circuit and reproduces the limit signal currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 25 is a playback control circuit and serves to make intermittent the output to the 1st switch 8 of the playback image voice bit stream extract circuit 7 with the output of the limit signal regeneration circuit 24, and the output of the time-of-day signal extract circuit 21.

[0021] Drawing 2 is drawing showing the signal structure broadcast from the information offer equipment in the gestalt 1 of operation of this invention. The signal broadcast from information offer equipment as shown in drawing 2 has a channel for 100 channels, and some programs are broadcast in order by each channel, respectively. Each program consists of the image voice bit stream and limit signal which are the main information. Current time information exists apart from those channel groups.

[0022] Current time information is numerical information which shows current time "like [at 10:15 on May 1, 1997]", and is information which changes with transition of time of day.

[0023] A limit signal is numerical information which shows the time limit when the playback is permitted when an image sound signal is recorded, and this is set up for every program transmitted.

[0024] For example, when "0:00 on May 10, 1997" are limit information, it is shown that playback will be permitted if the recorded image sound signal is before 0:00 on May 10, 1997, and playback is not permitted after it.

[0025] In drawing 1, the signal received with a receiving antenna 1 is a signal which received the modulation to which the contents of a signal broadcast from the information offer equipment shown in drawing 2 were suitable for broadcast. From the signal received with the receiving antenna 1, the receiving image voice bit stream extract circuit 2 extracts, the signal, i.e., the bit stream, by which the image of the program made into the purpose and voice were digitized. The output of the receiving image voice bit stream extract circuit 2 is inputted into the 1st b input and record signal modulation circuit 23 of a switch 8. From the signal received with the receiving antenna 1, the time-of-day signal extract circuit 21 extracts a current time signal to coincidence, and outputs it to it in the playback control circuit 25. Moreover, from the signal received with the receiving antenna 1, the limit signal extract circuit 22 extracts the limit signal which shows the playback term of the program made into the purpose, and inputs it into the record signal modulation circuit 23.

[0026] When recording the image and speech information which were received with the receiving antenna 1 on the rec/play disk 5, it becomes irregular by the signal suitable for multiplexing the output of the receiving image voice bit stream extract circuit 2, and the output of the limit signal extract circuit 22, and recording on the rec/play disk 5, and the record signal modulation circuit 23 is inputted into a magnetic recording reproducing head 4. On the other hand, the rec/play disk 5 is rotating at the engine speed which was suitable for record playback with the disk slewing gear 6, and according to the electrical input, a magnetic recording reproducing head 4 irradiates light so that it may change the reflection factor on the rec/play disk 5. This records an image and a sound signal on the rec/play disk 5.

[0027] Moreover, at the time of the image recorded on the rec/play disk 5, and sound signal playback, a magnetic recording reproducing head 4 changes into an electric signal change of the reflection factor recorded on the rec/play disk 5, and inputs it into the playback image voice bit stream extract circuit 7 and the limit signal regeneration circuit 24. The playback image voice bit stream extract circuit 7 extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4, and outputs it to the playback control circuit 25.

[0028] The limit signal regeneration circuit 24 extracts to coincidence the limit signal which shows the playback term reproduced from the rec/play disk 5 outputted from the output of a magnetic recording reproducing head 4, and outputs it to it in the playback control circuit 25.

[0029] The playback control circuit 25 compares the input signal from the time-of-day signal extract circuit 21 with the input signal from the limit signal regeneration circuit 24, and determines whether to output the output of the playback image voice bit stream extract circuit 7 to a input of the 1st switch 8 according to the

comparison result, or not carry out. For example, since current time is within a term supposing the input signal from the time-of-day signal extract circuit 21 will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May 10, 1997 10:15 on May 1, 1997, the playback control circuit 25 outputs the output of the playback image voice bit stream extract circuit 7 to an input of the 1st switch 8.

[0030] On the other hand, since current time is not within a term supposing the input signal from the time-of-day signal extract circuit 21 will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May 10, 1997 10:15 on May 11, 1997, the playback control circuit 25 does not output the output of the playback image voice bit stream extract circuit 7 to an input of the 1st switch 8.

[0031] The 1st switch 8 is set to the a side, when a user sets up playback of an input signal and playback of the rec/play disk 5 is directed to the b side with the directions means which is not illustrated. The output of the 1st switch 8 is inputted into the image sound signal regenerative circuit 9. In the image sound signal regenerative circuit 9, from the image voice bit stream inputted, an image and a sound signal are reproduced and it is outputted to an output terminal 10. The image sound signal outputted from the output terminal 10 is outputted to a graphic display device, sound equipment, etc. which are not illustrated, and a user can appreciate them.

[0032] Although an image and a sound signal are reproduced unconditionally and it is outputted to an output terminal 10 when a user sets up playback of an input signal Like, by the playback control circuit 25, when [which was mentioned above when a user directed playback of the rec/play disk 5] current time is not within a term Since the output of the playback image voice bit stream extract circuit 7 is not outputted to an input of the 1st switch 8, an image and a sound signal are not reproduced at this time, but an image sound signal is no longer outputted to an output terminal 10. Therefore, when current time is not within a term, a user cannot appreciate the image and speech information which were recorded on the rec/play disk 5. Thereby, according to receiving contents, a refreshable period can be limited by the information offer equipment side.

[0033] (Gestalt 2 of operation) Drawing 3 is the block diagram showing the configuration of the information record regenerative apparatus of the gestalt 2 of operation of this invention. In drawing 3, 1 is a receiving antenna and receives the signal broadcast from information offer equipment. 2 is a receiving image voice bit stream extract circuit, and extracts the digitized image sound signal which is made into the purpose from the output of a receiving antenna 1. 4 is a magnetic recording reproducing head and performs record playback to the rec/play disk 5. 5 is a rec/play disk, it rotates at the rotational frequency which was suitable for record playback with the disk slewing gear 6, and informational record and playback are performed by the magnetic recording reproducing head 4. 6 is a disk slewing gear and rotates the rec/play disk 5 at the rotational frequency suitable for record playback. 7 is a playback image voice bit stream extract circuit, and extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 8 is the 1st switch, and changes and outputs the output of the receiving image voice bit stream extract circuit 2, and the output of the 2nd switch 34. 9 is an image sound signal regenerative circuit, from the output of the 1st switch 8, reproduces an image and a sound signal and outputs them to an output terminal 10. 10 is an output terminal and an image and a sound signal are outputted to a graphic display device, sound equipment, etc. which are not illustrated from this. 21 is a time-of-day signal extract circuit, and extracts the current time signal digitized from the output of a receiving antenna 1. 22 is a limit signal extract circuit and extracts the limit signal digitized from the output of a receiving antenna 1. 23 is a record signal modulation circuit, multiplexes the output of the receiving image voice bit stream extract circuit 2, and the output of the limit signal correction circuit 31, and adds the signal modulation suitable for recording on the rec/play disk 5. 24 is a limit signal regeneration circuit and reproduces the limit signal currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. It is a limit signal correction circuit, and 31 adds the output of the limit signal extract circuit 22, and the output of the time-of-day signal extract circuit 21, it considers as a limit signal and outputs. 32 is a grace limiting circuit and generates the signal to which the grace of an image sound signal was reduced from the output of the playback image voice bit stream extract circuit 7. 33 is a playback control circuit and controls the 2nd switch 34 by the output of the time-of-day signal extract circuit 21, and the output of the limit signal regeneration circuit 24. 34 is the 2nd switch, changes the output of the playback image voice bit stream extract circuit 7 and the grace limiting circuit 32, and outputs it to an input of the 1st switch 8.

[0034] Drawing 4 is drawing showing the signal structure broadcast from the information offer equipment in the gestalt 2 of operation of this invention. The signal broadcast from information offer equipment as shown in drawing has a channel for 100 channels, and some programs are broadcast in order by each channel,

respectively. Each program consists of the image voice bit stream and limit signal which are the main information. Current time information exists apart from those channel groups.

[0035] Current time information is numerical information which shows current time "like [at 10:15 on May 1, 1997]", and is information which changes with transition of time of day.

[0036] A limit signal is numerical information which shows the period when the playback is permitted when an image sound signal is recorded, and this is set up by the program unit transmitted. For example, when "ten-day 0 hour, and 00 minutes" are limit signals, playback is permitted for after [record] ten days, and, as for the recorded image sound signal, playback is not permitted after it.

[0037] In drawing 3, the signal received with the receiving antenna 1 is a signal which received the modulation to which the contents of a signal broadcast from the information offer equipment shown in drawing 4 were suitable for broadcast.

[0038] From the signal received with the receiving antenna 1, the receiving image voice bit stream extract circuit 2 extracts, the signal, i.e., the bit stream, by which the image of the program made into the purpose and voice were digitized. The output of the receiving image voice bit stream extract circuit 2 is inputted into the 1st b input and record signal modulation circuit 23 of a switch 8.

[0039] From the signal received with the receiving antenna 1, the time-of-day signal extract circuit 21 extracts a current time signal to coincidence, and outputs it to it in the playback control circuit 33 and the limit signal correction circuit 31. Moreover, from the signal received with the receiving antenna 1, the limit signal extract circuit 22 extracts the limit signal which shows the period when playback of the program made into the purpose is permitted, and inputs it into the limit signal correction circuit 31. The limit signal correction circuit 31 adds the output of the time-of-day signal extract circuit 21, and the output of the limit signal extract circuit 22, and corrects and outputs a limit signal.

[0040] For example, if "it will be at 10:15 on May 1, 1997" current time information and limit signals are "ten-day 6 hours, and 30 minutes", it will become the limit signal with which it was corrected as a result of [the] addition ("16:45 on May 11, 1997"), and will be outputted. [i.e.,]

[0041] When recording the image and speech information which were received with the receiving antenna 1 on the rec/play disk 5, it becomes irregular by the signal suitable for multiplexing the output of the limit signal correction circuit 31 which shows the output and playback limit of the receiving image voice bit stream extract circuit 2, and recording on the rec/play disk 5, and the record signal modulation circuit 23 is inputted into a magnetic recording reproducing head 4. On the other hand, the rec/play disk 5 is rotating at the engine speed which was suitable for record and playback with the disk slewing gear 6, and according to the electrical input, a magnetic recording reproducing head 4 irradiates light so that it may change the reflection factor on the rec/play disk 5. This records an image and a sound signal on the rec/play disk 5. Therefore, when an image and speech information are recorded on the rec/play disk 5, it will be recorded on coincidence by coincidence, the output, i.e., the limit signal, of the limit signal correction circuit 31.

[0042] Moreover, at the time of playback of the image and speech information which were recorded on the rec/play disk 5, a magnetic recording reproducing head 4 changes into an electric signal change of the reflection factor recorded on the rec/play disk 5, and inputs it into the playback image voice bit stream extract circuit 7 and the limit signal regeneration circuit 24. The playback image voice bit stream extract circuit 7 extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4, and outputs it to the 2nd c input and grace limiting circuit 32 of a switch 34.

[0043] The limit signal regeneration circuit 24 extracts to coincidence the limit signal which shows the playback term reproduced from the rec/play disk 5 outputted from the output of a magnetic recording reproducing head 4, and outputs it to it in the playback control circuit 33.

[0044] The playback control circuit 33 compares the input signal from the time-of-day signal extract circuit 21 with the input signal from the limit signal regeneration circuit 24, and controls the 2nd switch 34 according to the comparison result.

[0045] For example, since current time is within a term supposing the input signal from the time-of-day signal extract circuit 21 will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May 10, 1997 10:15 on May 1, 1997, the playback control circuit 33 sets the 2nd switch 34 to the c side.

[0046] On the other hand, since current time is not within a term supposing the input signal from the time-of-day signal extract circuit 21 will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May

10, 1997 10:15 on May 11, 1997, as for the playback control circuit 33, the 2nd switch 34 is set to the d side. [0047] The grace limiting circuit 32 outputs the image voice bit stream which degraded the grace of the image reproduced and voice from the output of the playback image voice bit stream extract circuit 7.

[0048] The 1st switch 8 is set to the a side, when a user sets up playback of an input signal and playback of the rec/play disk 5 is directed to the b side with the directions means which is not illustrated. The output of the 1st switch 8 is inputted into the image sound signal regenerative circuit 9. In the image sound signal regenerative circuit 9, from an input bit stream, an image and a sound signal are reproduced and it is outputted to an output terminal 10. The image sound signal outputted from the output terminal 10 is outputted to a graphic display device, sound equipment, etc. which are not illustrated, and a user can appreciate them.

[0049] When a user sets up playback of an input signal, an image and a sound signal are reproduced unconditionally and it is outputted to an output terminal 10. When a user directs playback of the rec/play disk 5, when [which was mentioned above] current time is within a term, the 2nd switch is set to the c side by the playback control circuit 33 like. In this case, since the output of the playback image voice bit stream extract circuit 7 is inputted into the image sound signal regenerative circuit 9 via the 2nd switch 34 and 1st switch 8, it is reproduced in the image sound signal regenerative circuit 9, and the image sound signal currently recorded on the rec/play disk 5 is outputted to an output terminal 10. On the other hand, when current time is not within a term, the 2nd switch is set to the d side by the playback control circuit 33. In this case, since the output of the playback image voice bit stream extract circuit 7 is inputted into the image sound signal regenerative circuit 9 via the grace limiting circuit 32, the 2nd switch 34, and the 1st switch 8, grace is reduced, it is reproduced in the image sound signal regenerative circuit 9, and the image sound signal currently recorded on the rec/play disk 5 is outputted to an output terminal 10 in the grace limiting circuit 32. Therefore, a user can appreciate only the image and sound signal with which the grace of the image recorded on the rec/play disk 5 and speech information fell, when current time is not within a term. Thereby, according to receiving contents, the playback grace after a refreshable period and a period can be limited by the information offer equipment side.

[0050] (Gestalt 3 of operation) Drawing 5 is the block diagram showing the configuration of the information record regenerative apparatus of the gestalt 3 of operation of this invention. In drawing 5, 1 is a receiving antenna and receives the signal broadcast from information offer equipment. 2 is a receiving image voice bit stream extract circuit, and extracts the digitized image sound signal which is made into the purpose from the output of a receiving antenna 1. 4 is a magnetic recording reproducing head and performs record playback to the rec/play disk 5. 5 is a rec/play disk, it rotates at the rotational frequency which was suitable for record playback with the disk slewing gear 6, and informational record and playback are performed by the magnetic recording reproducing head 4. 6 is a disk slewing gear and rotates the rec/play disk 5 at the rotational frequency suitable for record playback. 7 is a playback image voice bit stream extract circuit, and extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 8 is the 1st switch, and changes and outputs the output of the receiving image voice bit stream extract circuit 2, and the output of the playback control circuit 44. 9 is an image sound signal regenerative circuit, from the output of the 1st switch 8, reproduces an image and a sound signal and outputs them to an output terminal 10. 10 is an output terminal and an image and a sound signal are outputted to a graphic display device, sound equipment, etc. which are not illustrated from this. 21 is a time-of-day signal extract circuit, and extracts the current time signal digitized from the output of a receiving antenna 1. 22 is a limit signal extract circuit and extracts the limit signal digitized from the output of a receiving antenna 1. 24 is a limit signal regeneration circuit and reproduces the limit signal currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 41 is a limit flag extract circuit and extracts a limit flag from the output of a receiving antenna 1. 42 is a record signal modulation circuit and adds the signal modulation suitable for multiplexing the output of the receiving image voice bit stream extract circuit 2, the output of the limit signal extract circuit 22, and the output of the limit flag extract circuit 41, and recording on the rec/play disk 5. 43 is a limit flag regenerative circuit and reproduces the limit flag currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4. 44 is a playback control circuit and serves to make intermittent the output to the 1st switch 8 of the playback image voice bit stream extract circuit 7 with the output of the time-of-day signal extract circuit 21, the output of the limit signal regeneration circuit 24, and the output of the limit flag regenerative circuit 43.

[0051] Drawing 6 is drawing showing the signal structure broadcast from the information offer equipment in

the gestalt 3 of operation of this invention. The signal broadcast from information offer equipment as shown in drawing has a channel for 100 channels, and some programs are broadcast in order by each channel, respectively. Each program consists of the image voice bit stream and limit signal which are the main information, and a limit flag. Current time information exists apart from those channel groups.

[0052] Current time information is numerical information which shows current time "like [at 10:15 on May 1, 1997]", and is information which changes with transition of time of day.

[0053] A limit signal is numerical information which shows the time limit which permits the playback when an image sound signal is recorded, and this is set up by the program unit transmitted.

[0054] For example, when "0:00 on May 10, 1997" are limit information, if the recorded image sound signal is before 0:00 on May 10, 1997, playback will be permitted and playback will not be permitted after it.

[0055] A limit flag is a flag which shows whether it is the time amount part for which the control whose image sound signal by which current reception is carried out is playback is adapted. Reproductive control is adapted for a part forward in this flag, and reproductive control is not adapted for a part negative in this flag. A limit flag is information set up for every unit time amount within a program. That is, also when playback is not permitted by this flag by control information within a single program, it enables only that part to permit playback.

[0056] In drawing 5, the signal received with the receiving antenna 1 is a signal which received the modulation to which the contents of a signal broadcast from the information offer equipment shown in drawing 6 were suitable for broadcast. From the signal received with the receiving antenna 1, the receiving image voice bit stream extract circuit 2 extracts, the signal, i.e., the bit stream, by which the image of the program made into the purpose and voice were digitized. The output of the receiving image voice bit stream extract circuit 2 is inputted into the 1st b input and record signal modulation circuit 42 of a switch 8. From the signal received with the receiving antenna 1, the time-of-day signal extract circuit 21 extracts a current time signal to coincidence, and outputs it to it in the playback control circuit 44. Moreover, from the signal received with the receiving antenna 1, the limit signal extract circuit 22 extracts the limit signal which shows the playback term of the program made into the purpose, and inputs it into the record signal modulation circuit 42. From the signal received with the receiving antenna 1, the limit flag extract circuit 41 extracts the limit flag of the program made into the purpose, and inputs it into the record signal modulation circuit 42.

[0057] When recording the image and the speech information which were received with the receiving antenna 1 on the rec/play disk 5, it becomes irregular by the signal suitable for multiplexing the output of the limit signal extract circuit 22 and the output of the limit flag extract circuit 41 which show the output and the playback term of the receiving image voice bit stream extract circuit 2, and recording on the rec/play disk 5, and a record signal modulation circuit 42 inputs into a magnetic recording reproducing head 4. On the other hand, the rec/play disk 5 is rotating at the engine speed which was suitable for record and playback with the disk slewing gear 6, and according to the electrical input, a magnetic recording reproducing head 4 irradiates light so that it may change the reflection factor on the rec/play disk 5. This records an image and a sound signal on the rec/play disk 5. Therefore, when an image and speech information are recorded on the rec/play disk 5, the output of the limit signal extract circuit 22, i.e., the output of a limit signal and the limit flag extract circuit 41, i.e., a limit flag, will be recorded on coincidence by coincidence.

[0058] Moreover, at the time of playback of the image and sound signal which were recorded on the rec/play disk 5, a magnetic recording reproducing head 4 changes into an electric signal change of the reflection factor recorded on the rec/play disk 5, and inputs it into the playback image voice bit stream extract circuit 7, the limit signal regeneration circuit 24, and the limit flag regenerative circuit 43. The playback image voice bit stream extract circuit 7 extracts the image voice bit stream currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4, and outputs it to the playback control circuit 44.

[0059] The limit signal regeneration circuit 24 extracts to coincidence the limit signal which shows the playback term currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from the output of a magnetic recording reproducing head 4, and outputs it to it in the playback control circuit 44. Moreover, the limit flag regenerative circuit 43 extracts the limit flag currently recorded from the electric signal reproduced from the rec/play disk 5 outputted from a magnetic recording reproducing head 4, and outputs it to the playback control circuit 44.

[0060] The playback control circuit 44 compares the input signal from the time-of-day signal extract circuit 21 with the input signal from the limit signal regeneration circuit 24, and determines whether to output the output

of the playback image voice bit stream extract circuit 7 to a input of the 1st switch 8 according to the limit flag inputted by the comparison result and the limit flag regenerative circuit 43, or not carry out. For example, since current time is within a term supposing the input signal from the time-of-day signal extract circuit 21 will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May 10, 1997 10:15 on May 1, 1997, the playback control circuit 44 outputs the output of the playback image voice bit stream extract circuit 7 to a input of the 1st switch 8 irrespective of the logic situation of a limit flag.

[0061] On the other hand, the input signal from the time-of-day signal extract circuit 21 at 10:15 on May 11, 1997 Since current time is not within a term supposing it will be an input signal from the limit signal regeneration circuit 24 at 0:00 on May 10, 1997, the playback control circuit 44 When a control flag is forward, the output of the playback image voice bit stream extract circuit 7 is not outputted to a input of the 1st switch 8, but only when a control flag is negative, the output of the playback image voice bit stream extract circuit 7 is outputted to a input of the 1st switch 8.

[0062] The 1st switch 8 is set to the a side, when a user sets up playback of an input signal and playback of the rec/play disk 5 is directed to the b side with the directions means which is not illustrated. The output of the 1st switch 8 is inputted into the image sound signal regenerative circuit 9. In the image sound signal regenerative circuit 9, from an input bit stream, an image and a sound signal are reproduced and it is outputted to an output terminal 10. The image sound signal outputted from the output terminal 10 is outputted to a graphic display device, sound equipment, etc. which are not illustrated, and a user can appreciate them.

[0063] Although an image and a sound signal are reproduced unconditionally and it is outputted to an output terminal 10 when a user sets up playback of an input signal Like, by the playback control circuit 44, when [which was mentioned above when a user directed playback of the rec/play disk 5] current time is not within a term Since a control flag is not outputted to a input of the 1st switch 8 in the output of the playback image voice bit stream extract circuit 7 in a forward part, at this time, an image and a sound signal are no longer outputted to an output terminal 10. Therefore, a user can appreciate a part of image recorded on the rec/play disk 5, and speech information, when current time is not within a term. Thereby, for example, by the movie program, it becomes possible to permit playback of only CM part etc., and the refreshable part after a refreshable period and a period can be limited by the information offer equipment side according to receiving contents.

[0064] In addition, although the example constituted from a rec/play mold disk unit explained the information record regenerative apparatus in the above explanation, it can carry out similarly about other record regenerative apparatus, for example, VTR. That is, semiconductor memory, such as a rec/play mold optical disk and not only a magnetic tape but a magneto-optic disk, a magnetic disk (a floppy disk and hard disk), cache memory, etc., is sufficient as a record medium.

[0065] Moreover, in the gestalt of operation mentioned above, although the information record regenerative apparatus has received an image and speech information with the receiving antenna of drawing 1 and a parabolic antenna which was illustrated by 3 and 5, BS broadcast and not only the satellite broadcasting service of CS broadcasting but the thing by which digital broadcast was carried out with terrestrial broadcasting or CATV is satisfactory at all, and it can not necessarily acquire the same effectiveness.

[0066] Furthermore, the digital information transmitted can acquire the same effectiveness by applying the gestalt of operation mentioned above after processing of information defrosting, decoding of a code, the Di scramble, etc. also to such digital information, although there is the so-called thing [that an information compression is carried out] and the so-called processing of encryption, a scramble, etc. may be made, in order to lessen transmitting capacity as much as possible.

[0067]

[Effect of the Invention] According to this invention, the information offer equipment and the information record regenerative apparatus which can protect copyright easily are obtained as mentioned above by the ability restricting a refreshable period and grace to arbitration by the information offer equipment side according to receiving contents.

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] Information offer equipment characterized by multiplexing and transmitting the main information and the limit information which shows a limit of the playback after this main information was recorded on the record medium.

[Claim 2] Limit information is information offer equipment according to claim 1 characterized by including the time information which shows a refreshable term.

[Claim 3] Limit information is information offer equipment according to claim 1 characterized by including the hour entry which shows current time and refreshable time amount.

[Claim 4] Limit information is information offer equipment according to claim 1 characterized by including the information which shows the time amount part which receives a playback limit of the main information.

[Claim 5] The main information is information offer equipment according to claim 1 characterized by including one of image information and the speech information, or both.

[Claim 6] The sending signal to which the main information and the limit information which shows a limit of the playback after this main information was recorded on the record medium are transmitted by multiplex is received. A main information extract means to be the information record regenerative apparatus which records on a record medium or is reproduced, and to extract said main information from receipt information, A record means to record both a limit information extract means to extract said limit information from said receipt information, and said main information extract means output and said limit information means output on said record medium, A main information playback means to reproduce said main information extract means output recorded on said record medium, A limit information playback means to reproduce said limit information means output recorded on said record medium, The information record regenerative apparatus characterized by providing a playback limit means by which a clock means to obtain current time, and said limit information playback means output and said clock means output restrict playback actuation of said main information playback means.

[Claim 7] A playback limit means is an information record regenerative apparatus according to claim 6 characterized by directing prohibition and authorization of playback actuation for the main information playback means.

[Claim 8] A playback limit means is an information record regenerative apparatus according to claim 6 characterized by controlling the grace of the print-out of playback actuation for the main information playback means.

[Claim 9] The main information playback means is an information record regenerative apparatus according to claim 6 characterized by outputting one of image information and the speech information, or both.

[Translation done.]

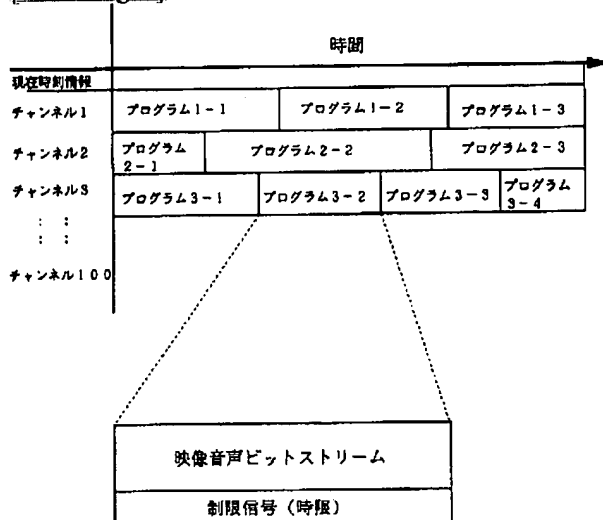
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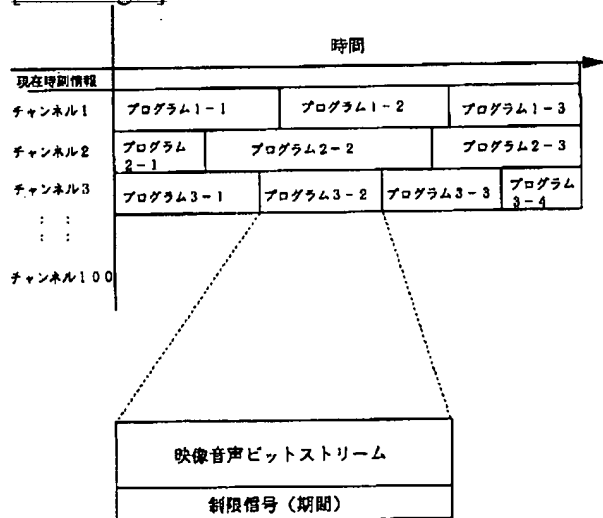
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DRAWINGS

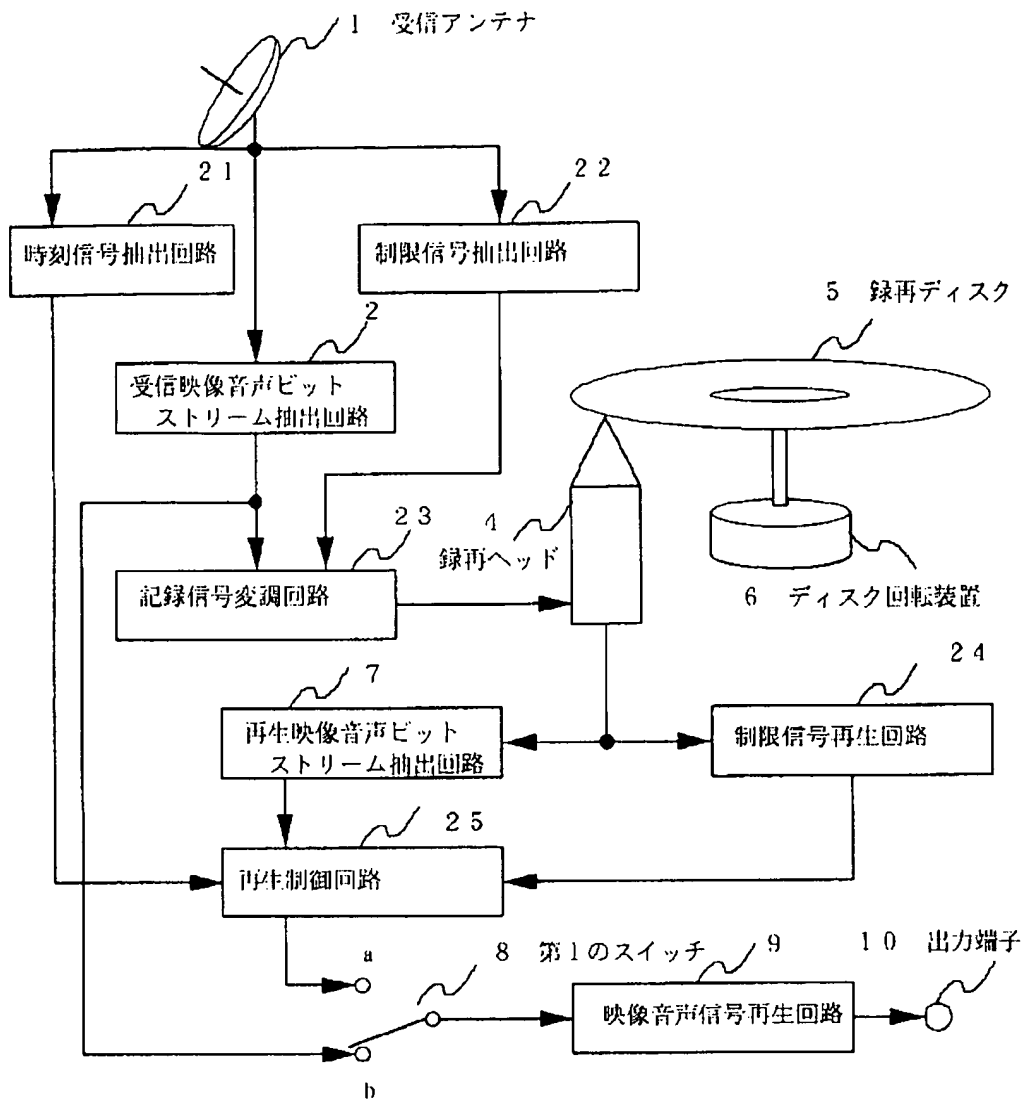
[Drawing 2]



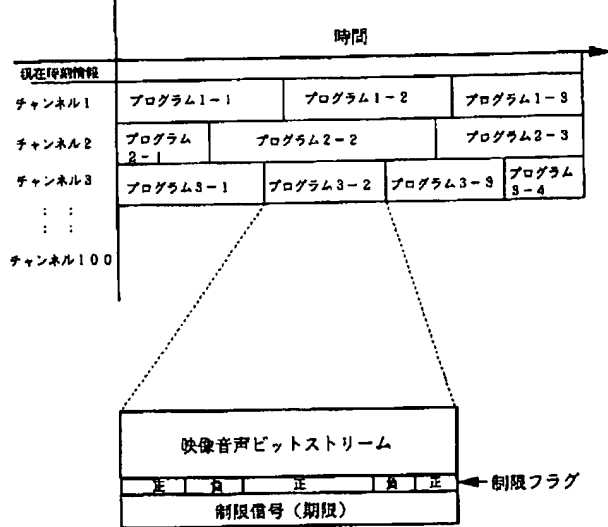
[Drawing 4]



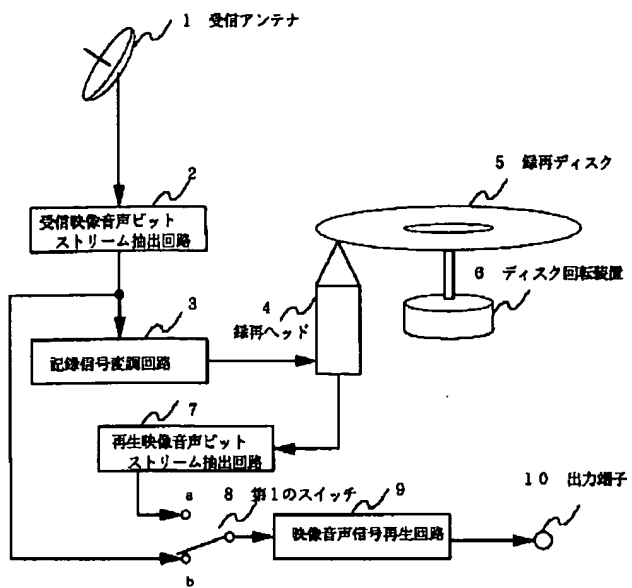
[Drawing 1]



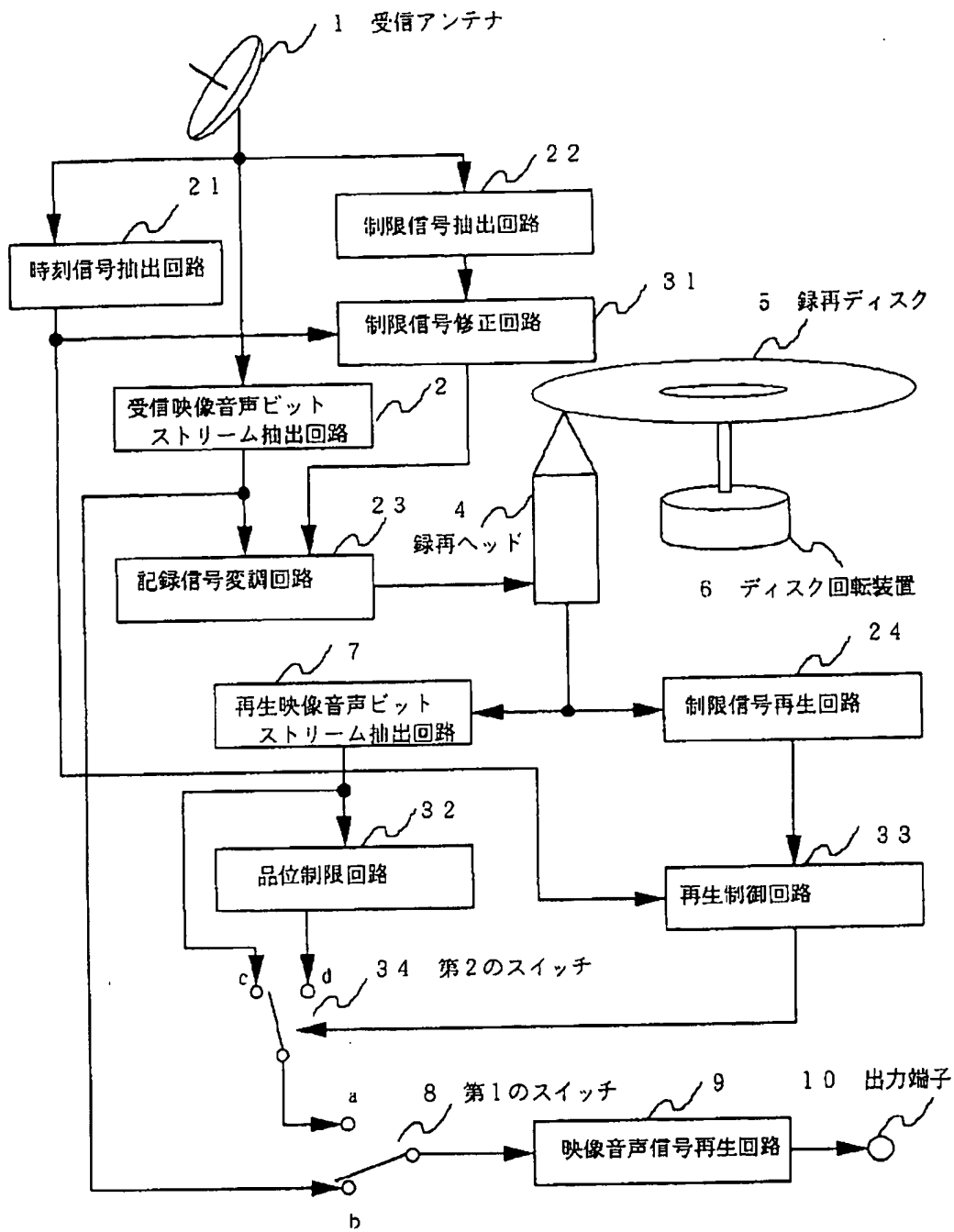
[Drawing 6]



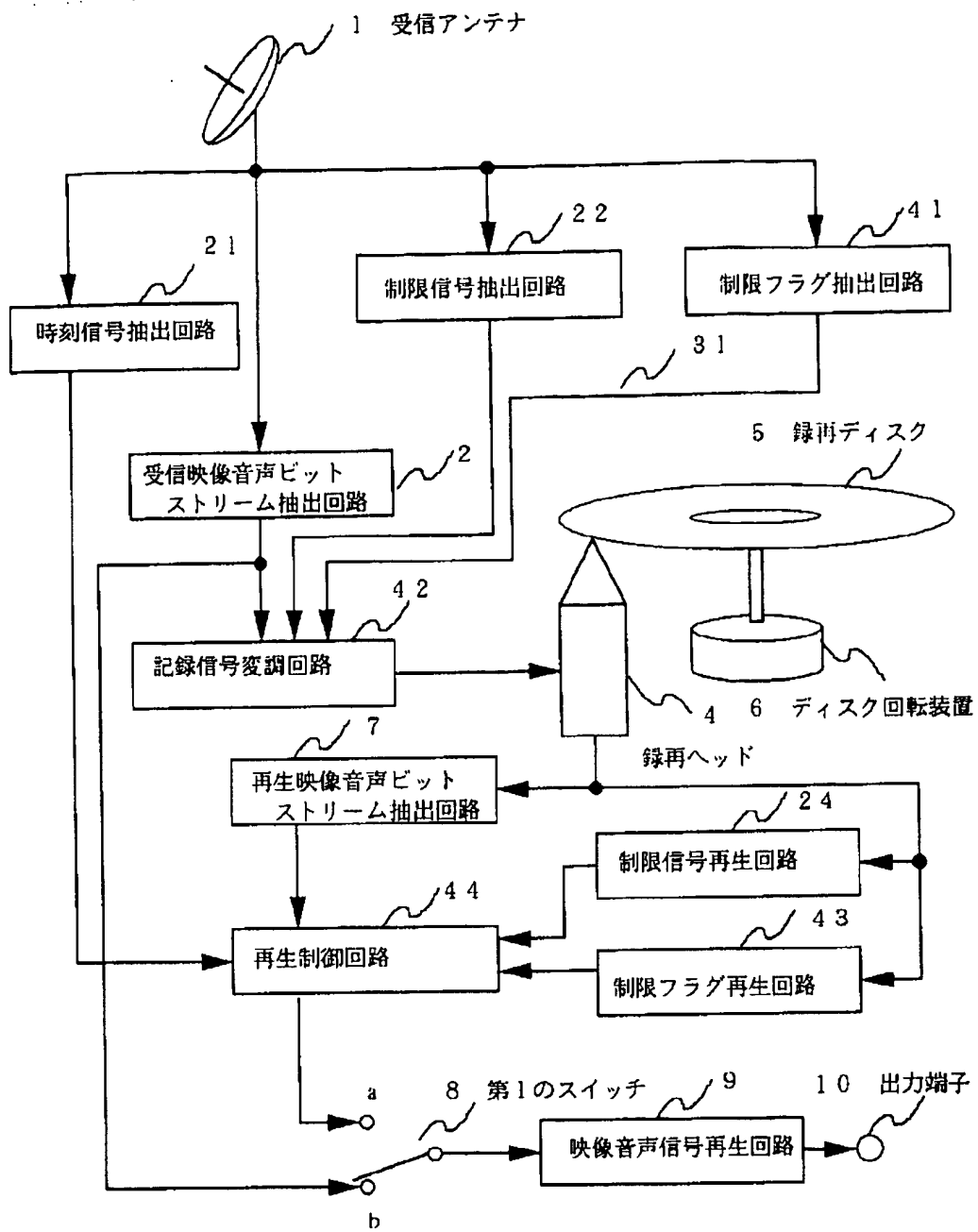
[Drawing 7]



[Drawing 3]



[Drawing 5]



[Translation done.]